

SEQUENCE LISTING

<110> O'Keefe, Theresa L.

<120> USE OF HMGB FRAGMENTS AS
ANTI-INFLAMMATORY AGENTS

<130> 3258.1009-001

<150> 60/427,841

<151> 2002-11-20

<160> 58

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 215

<212> PRT

<213> Homo sapiens

<400> 1

Met	Gly	Lys	Gly	Asp	Pro	Lys	Lys	Pro	Arg	Gly	Lys	Met	Ser	Ser	Tyr	1	5	10	15
Ala	Phe	Phe	Val	Gln	Thr	Cys	Arg	Glu	Glu	His	Lys	Lys	Lys	His	Pro	20	25	30	
Asp	Ala	Ser	Val	Asn	Phe	Ser	Glu	Phe	Ser	Lys	Lys	Cys	Ser	Glu	Arg	35	40	45	
Trp	Lys	Thr	Met	Ser	Ala	Lys	Glu	Lys	Gly	Lys	Phe	Glu	Asp	Met	Ala	50	55	60	
Lys	Ala	Asp	Lys	Ala	Arg	Tyr	Glu	Arg	Glu	Met	Lys	Thr	Tyr	Ile	Pro	65	70	75	80
Pro	Lys	Gly	Glu	Thr	Lys	Lys	Lys	Phe	Lys	Asp	Pro	Asn	Ala	Pro	Lys	85	90	95	
Arg	Pro	Pro	Ser	Ala	Phe	Phe	Leu	Phe	Cys	Ser	Glu	Tyr	Arg	Pro	Lys	100	105	110	
Ile	Lys	Gly	Glu	His	Pro	Gly	Leu	Ser	Ile	Gly	Asp	Val	Ala	Lys	Lys	115	120	125	
Leu	Gly	Glu	Met	Trp	Asn	Asn	Thr	Ala	Ala	Asp	Asp	Lys	Gln	Pro	Tyr	130	135	140	
Glu	Lys	Lys	Ala	Ala	Lys	Leu	Lys	Glu	Lys	Tyr	Glu	Lys	Asp	Ile	Ala	145	150	155	160
Ala	Tyr	Arg	Ala	Lys	Gly	Lys	Pro	Asp	Ala	Ala	Lys	Lys	Gly	Val	Val	165	170	175	
Lys	Ala	Glu	Lys	Ser	Lys	Lys	Lys	Lys	Glu	Glu	Glu	Glu	Asp	Glu	Glu	180	185	190	
Asp	Glu	Glu	Asp	Glu	Glu	Glu	Glu	Glu	Asp	Glu	Glu	Asp	Glu	Asp	Glu	195	200	205	
Glu	Glu	Asp	Asp	Asp	Asp	Glu										210	215		

<210> 2

<211> 215

<212> PRT

<213> Mus musculus

<400> 2
 Met Gly Lys Gly Asp Pro Lys Lys Pro Arg Gly Lys Met Ser Ser Tyr
 1 5 10 15
 Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
 20 25 30
 Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
 35 40 45
 Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
 50 55 60
 Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro
 65 70 75 80
 Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
 85 90 95
 Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Tyr Arg Pro Lys
 100 105 110
 Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
 115 120 125
 Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
 130 135 140
 Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
 145 150 155 160
 Ala Tyr Arg Ala Lys Gly Lys Pro Asp Ala Ala Lys Lys Gly Val Val
 165 170 175
 Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Asp Asp Glu Glu
 180 185 190
 Asp Glu Glu Asp Glu Glu Glu Glu Glu Glu Asp Glu Asp Glu
 195 200 205
 Glu Glu Asp Asp Asp Asp Glu
 210 215

<210> 3
 <211> 209
 <212> PRT
 <213> Homo sapiens

<400> 3
 Met Gly Lys Gly Asp Pro Asn Lys Pro Arg Gly Lys Met Ser Ser Tyr
 1 5 10 15
 Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
 20 25 30
 Asp Ser Ser Val Asn Phe Ala Glu Phe Ser Lys Lys Cys Ser Glu Arg
 35 40 45
 Trp Lys Thr Met Ser Ala Lys Glu Lys Ser Lys Phe Glu Asp Met Ala
 50 55 60
 Lys Ser Asp Lys Ala Arg Tyr Asp Arg Glu Met Lys Asn Tyr Val Pro
 65 70 75 80
 Pro Lys Gly Asp Lys Lys Gly Lys Lys Lys Asp Pro Asn Ala Pro Lys
 85 90 95
 Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu His Arg Pro Lys
 100 105 110
 Ile Lys Ser Glu His Pro Gly Leu Ser Ile Gly Asp Thr Ala Lys Lys
 115 120 125
 Leu Gly Glu Met Trp Ser Glu Gln Ser Ala Lys Asp Lys Gln Pro Tyr
 130 135 140
 Glu Gln Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
 145 150 155 160

3/19

Ala Tyr Arg Ala Lys Gly Lys Ser Glu Ala Gly Lys Lys Gly Pro Gly
 165 170 175
 Arg Pro Thr Gly Ser Lys Lys Lys Asn Glu Pro Glu Asp Glu Glu Glu
 180 185 190
 Glu Glu Glu Glu Glu Asp Glu Asp Glu Glu Glu Glu Asp Glu Asp Glu
 195 200 205
 Glu

<210> 4
 <211> 54
 <212> PRT
 <213> Homo sapiens

<400> 4
 Pro Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu
 1 5 10 15
 Arg Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met
 20 25 30
 Ala Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile
 35 40 45
 Pro Pro Lys Gly Glu Thr
 50

<210> 5
 <211> 69
 <212> PRT
 <213> Homo sapiens

<400> 5
 Asn Ala Pro Lys Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu
 1 5 10 15
 Tyr Arg Pro Lys Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp
 20 25 30
 Val Ala Lys Lys Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp
 35 40 45
 Lys Gln Pro Tyr Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu
 50 55 60
 Lys Asp Ile Ala Ala
 65

<210> 6
 <211> 22
 <212> DNA
 <213> Homo sapiens

<400> 6
 gatgggcaaa ggagatccta ag

22

<210> 7
 <211> 29
 <212> DNA
 <213> Homo sapiens

<400> 7
gcggccgctt attcatcatc atcatcttc 29

<210> 8
<211> 22
<212> DNA
<213> Homo sapiens

<400> 8
gatgggcaaa ggagatccta ag 22

<210> 9
<211> 32
<212> DNA
<213> Homo sapiens

<400> 9
gcggccgctc acttgctttt ttcagccttg ac 32

<210> 10
<211> 21
<212> DNA
<213> Homo sapiens

<400> 10
gagcataaga agaagcaccc a 21

<210> 11
<211> 32
<212> DNA
<213> Homo sapiens

<400> 11
gcggccgctc acttgctttt ttcagccttg ac 32

<210> 12
<211> 24
<212> DNA
<213> Homo sapiens

<400> 12
aagttcaagg atcccaatgc aaag 24

<210> 13
<211> 32
<212> DNA
<213> Homo sapiens

<400> 13
gcggccgctc aatatgcagc tatatccttt tc 32

<210> 14
<211> 22
<212> DNA
<213> Homo sapiens

<400> 14

gatgggcaaaa ggagatccta ag

22

<210> 15
 <211> 24
 <212> DNA
 <213> Homo sapiens

<400> 15
 tcacttttttt gtctcccctt tggg

24

<210> 16
 <211> 20
 <212> PRT
 <213> Homo sapiens

<400> 16
 Asn Ala Pro Lys Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu
 1 5 10 15
 Tyr Arg Pro Lys
 20

<210> 17
 <211> 54
 <212> PRT
 <213> Homo sapiens

<400> 17
 Pro Asp Ser Ser Val Asn Phe Ala Glu Phe Ser Lys Lys Cys Ser Glu
 1 5 10 15
 Arg Trp Lys Thr Met Ser Ala Lys Glu Lys Ser Lys Phe Glu Asp Met
 20 25 30
 Ala Lys Ser Asp Lys Ala Arg Tyr Asp Arg Glu Met Lys Asn Tyr Val
 35 40 45
 Pro Pro Lys Gly Asp Lys
 50

<210> 18
 <211> 216
 <212> PRT
 <213> Homo sapiens

<400> 18
 Met Gly Lys Gly Asp Pro Lys Lys Pro Thr Gly Lys Met Ser Ser Tyr
 1 5 10 15
 Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
 20 25 30
 Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
 35 40 45
 Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
 50 55 60
 Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro
 65 70 75 80
 Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
 85 90 95

6/19

```

Arg Leu Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Tyr Arg Pro Lys
      100      105      110
Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
      115      120      125
Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
      130      135      140
Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
145      150      155      160
Ala Tyr Arg Ala Lys Gly Lys Pro Asp Ala Ala Lys Lys Gly Val Val
      165      170      175
Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Glu Asp Glu Glu
      180      185      190
Asp Glu Glu Asp Glu Glu Glu Glu Glu Asp Glu Glu Asp Glu Glu Asp
      195      200      205
Glu Glu Glu Asp Asp Asp Asp Glu
      210      215

```

<210> 19
 <211> 182
 <212> PRT
 <213> Homo sapiens

```

<400> 19
Met Gly Lys Gly Asp Pro Lys Lys Pro Thr Gly Lys Met Ser Ser Tyr
. 1      5      10      15
Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
      20      25      30
Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
      35      40      45
Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
      50      55      60
Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro
65      70      75      80
Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
      85      90      95
Arg Leu Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Tyr Arg Pro Lys
      100      105      110
Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
      115      120      125
Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
      130      135      140
Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
145      150      155      160
Ala Tyr Arg Ala Lys Gly Lys Pro Asp Ala Ala Lys Lys Gly Val Val
      165      170      175
Lys Ala Glu Lys Ser Lys
      180

```

<210> 20
 <211> 74
 <212> PRT
 <213> Homo sapiens

<400> 20

7/19

Phe	Lys	Asp	Pro	Asn	Ala	Pro	Lys	Arg	Leu	Pro	Ser	Ala	Phe	Phe	Leu
1				5					10					15	
Phe	Cys	Ser	Glu	Tyr	Arg	Pro	Lys	Ile	Lys	Gly	Glu	His	Pro	Gly	Leu
			20					25					30		
Ser	Ile	Gly	Asp	Val	Ala	Lys	Lys	Leu	Gly	Glu	Met	Trp	Asn	Asn	Thr
		35					40					45			
Ala	Ala	Asp	Asp	Lys	Gln	Pro	Tyr	Glu	Lys	Lys	Ala	Ala	Lys	Leu	Lys
	50					55					60				
Glu	Lys	Tyr	Glu	Lys	Asp	Ile	Ala	Ala	Tyr						
65					70										

<210> 21
 <211> 85
 <212> PRT
 <213> Homo sapiens

Met	Gly	Lys	Gly	Asp	Pro	Lys	Lys	Pro	Thr	Gly	Lys	Met	Ser	Ser	Tyr
1				5					10					15	
Ala	Phe	Phe	Val	Gln	Thr	Cys	Arg	Glu	Glu	His	Lys	Lys	Lys	His	Pro
			20					25					30		
Asp	Ala	Ser	Val	Asn	Phe	Ser	Glu	Phe	Ser	Lys	Lys	Cys	Ser	Glu	Arg
		35					40					45			
Trp	Lys	Thr	Met	Ser	Ala	Lys	Glu	Lys	Gly	Lys	Phe	Glu	Asp	Met	Ala
	50					55					60				
Lys	Ala	Asp	Lys	Ala	Arg	Tyr	Glu	Arg	Glu	Met	Lys	Thr	Tyr	Ile	Pro
65					70					75					80
Pro	Lys	Gly	Glu	Thr											
				85											

<210> 22
 <211> 77
 <212> PRT
 <213> Homo sapiens

Pro	Thr	Gly	Lys	Met	Ser	Ser	Tyr	Ala	Phe	Phe	Val	Gln	Thr	Cys	Arg
1				5					10					15	
Glu	Glu	His	Lys	Lys	Lys	His	Pro	Asp	Ala	Ser	Val	Asn	Phe	Ser	Glu
			20					25					30		
Phe	Ser	Lys	Lys	Cys	Ser	Glu	Arg	Trp	Lys	Thr	Met	Ser	Ala	Lys	Glu
		35					40					45			
Lys	Gly	Lys	Phe	Glu	Asp	Met	Ala	Lys	Ala	Asp	Lys	Ala	Arg	Tyr	Glu
	50					55					60				
Arg	Glu	Met	Lys	Thr	Tyr	Ile	Pro	Pro	Lys	Gly	Glu	Thr			
65					70					75					

<210> 23
 <211> 20
 <212> PRT
 <213> Homo sapiens

<400> 23

Phe	Lys	Asp	Pro	Asn	Ala	Pro	Lys	Arg	Leu	Pro	Ser	Ala	Phe	Phe	Leu
1				5					10					15	
Phe	Cys	Ser	Glu												
			20												

<210> 24
 <211> 216
 <212> PRT
 <213> Homo sapiens

Met	Gly	Lys	Gly	Asp	Pro	Lys	Lys	Pro	Thr	Gly	Lys	Met	Ser	Ser	Tyr
1				5					10					15	
Ala	Phe	Phe	Val	Gln	Thr	Cys	Arg	Glu	Glu	His	Lys	Lys	Lys	His	Pro
			20					25					30		
Asp	Ala	Ser	Val	Asn	Phe	Ser	Glu	Phe	Ser	Lys	Lys	Cys	Ser	Glu	Arg
		35					40					45			
Trp	Lys	Thr	Met	Ser	Ala	Lys	Glu	Lys	Gly	Lys	Phe	Glu	Asp	Met	Ala
	50					55					60				
Lys	Ala	Asp	Lys	Ala	Arg	Tyr	Glu	Arg	Glu	Met	Lys	Thr	Tyr	Ile	Pro
65					70					75				80	
Pro	Lys	Gly	Glu	Thr	Lys	Lys	Lys	Phe	Lys	Asp	Pro	Asn	Ala	Pro	Lys
				85					90					95	
Arg	Leu	Pro	Ser	Ala	Phe	Phe	Leu	Phe	Cys	Ser	Glu	Tyr	Arg	Pro	Lys
			100					105					110		
Ile	Lys	Gly	Glu	His	Pro	Gly	Leu	Ser	Ile	Gly	Asp	Val	Ala	Lys	Lys
		115					120					125			
Leu	Gly	Glu	Met	Trp	Asn	Asn	Thr	Ala	Ala	Asp	Asp	Lys	Gln	Pro	Tyr
	130					135					140				
Glu	Lys	Lys	Ala	Ala	Lys	Leu	Lys	Glu	Lys	Tyr	Glu	Lys	Asp	Ile	Ala
145					150					155				160	
Ala	Tyr	Arg	Ala	Lys	Gly	Lys	Pro	Asp	Ala	Ala	Lys	Lys	Gly	Val	Val
				165					170					175	
Lys	Ala	Glu	Lys	Ser	Lys	Lys	Lys	Lys	Glu	Glu	Glu	Glu	Asp	Glu	Glu
			180				185						190		
Asp	Glu	Glu	Asp	Glu	Glu	Glu	Glu	Glu	Asp	Glu	Glu	Asp	Glu	Glu	Asp
		195				200						205			
Glu	Glu	Glu	Asp	Asp	Asp	Asp	Glu								
	210					215									

<210> 25
 <211> 211
 <212> PRT
 <213> Homo sapiens

Met	Gly	Lys	Gly	Asp	Pro	Lys	Lys	Pro	Arg	Gly	Lys	Met	Ser	Ser	Tyr
1				5					10					15	
Ala	Phe	Phe	Val	Gln	Thr	Cys	Arg	Glu	Glu	His	Lys	Lys	Lys	His	Ser
			20					25					30		
Asp	Ala	Ser	Val	Asn	Phe	Ser	Glu	Phe	Ser	Asn	Lys	Cys	Ser	Glu	Arg
		35					40					45			
Trp	Lys	Thr	Met	Ser	Ala	Lys	Glu	Lys	Gly	Lys	Phe	Glu	Asp	Met	Ala
	50					55					60				

9/19

```

Lys Ala Asp Lys Thr His Tyr Glu Arg Gln Met Lys Thr Tyr Ile Pro
65          70          75          80
Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
          85          90          95
Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Tyr His Pro Lys
          100          105          110
Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
          115          120          125
Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Gly
          130          135          140
Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
145          150          155          160
Ala Tyr Gln Ala Lys Gly Lys Pro Glu Ala Ala Lys Lys Gly Val Val
          165          170          175
Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Glu Asp Glu Glu
          180          185          190
Asp Glu Glu Asp Glu Glu Glu Glu Asp Glu Glu Asp Glu Glu Asp Asp
          195          200          205
Asp Asp Glu
          210

```

<210> 26
 <211> 188
 <212> PRT
 <213> Homo sapiens

```

<400> 26
Met Gly Lys Gly Asp Pro Lys Lys Pro Arg Gly Lys Met Ser Ser Tyr
1          5          10          15
Ala Phe Phe Val Gln Thr Cys Arg Glu Glu Cys Lys Lys Lys His Pro
          20          25          30
Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
          35          40          45
Trp Lys Ala Met Ser Ala Lys Asp Lys Gly Lys Phe Glu Asp Met Ala
          50          55          60
Lys Val Asp Lys Asp Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro
65          70          75          80
Pro Lys Gly Glu Thr Lys Lys Lys Phe Glu Asp Ser Asn Ala Pro Lys
          85          90          95
Arg Pro Pro Ser Ala Phe Leu Leu Phe Cys Ser Glu Tyr Cys Pro Lys
          100          105          110
Ile Lys Gly Glu His Pro Gly Leu Pro Ile Ser Asp Val Ala Lys Lys
          115          120          125
Leu Val Glu Met Trp Asn Asn Thr Phe Ala Asp Asp Lys Gln Leu Cys
          130          135          140
Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Lys Lys Asp Thr Ala
145          150          155          160
Thr Tyr Arg Ala Lys Gly Lys Pro Asp Ala Ala Lys Lys Gly Val Val
          165          170          175
Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu
          180          185

```

<210> 27
 <211> 205
 <212> PRT

10/19

<213> Homo sapiens

<400> 27

Met	Asp	Lys	Ala	Asp	Pro	Lys	Lys	Leu	Arg	Gly	Glu	Met	Leu	Ser	Tyr
1				5					10					15	
Ala	Phe	Phe	Val	Gln	Thr	Cys	Gln	Glu	His	Lys	Lys	Lys	Asn	Pro	
			20					25					30		
Asp	Ala	Ser	Val	Lys	Phe	Ser	Glu	Phe	Leu	Lys	Lys	Cys	Ser	Glu	Thr
		35					40					45			
Trp	Lys	Thr	Ile	Phe	Ala	Lys	Glu	Lys	Gly	Lys	Phe	Glu	Asp	Met	Ala
	50					55					60				
Lys	Ala	Asp	Lys	Ala	His	Tyr	Glu	Arg	Glu	Met	Lys	Thr	Tyr	Ile	Pro
65					70					75					80
Pro	Lys	Gly	Glu	Lys	Lys	Lys	Lys	Phe	Lys	Asp	Pro	Asn	Ala	Pro	Lys
				85					90					95	
Arg	Pro	Pro	Leu	Ala	Phe	Phe	Leu	Phe	Cys	Ser	Glu	Tyr	Arg	Pro	Lys
			100					105					110		
Ile	Lys	Gly	Glu	His	Pro	Gly	Leu	Ser	Ile	Asp	Asp	Val	Val	Lys	Lys
		115					120					125			
Leu	Ala	Gly	Met	Trp	Asn	Asn	Thr	Ala	Ala	Ala	Asp	Lys	Gln	Phe	Tyr
	130					135					140				
Glu	Lys	Lys	Ala	Ala	Lys	Leu	Lys	Glu	Lys	Tyr	Lys	Lys	Asp	Ile	Ala
145					150					155					160
Ala	Tyr	Arg	Ala	Lys	Gly	Lys	Pro	Asn	Ser	Ala	Lys	Lys	Arg	Val	Val
				165					170					175	
Lys	Ala	Glu	Lys	Ser	Lys	Lys	Lys	Lys	Glu	Glu	Glu	Glu	Asp	Glu	Glu
			180					185					190		
Asp	Glu	Gln	Glu	Glu	Glu	Asn	Glu	Glu	Asp	Asp	Asp	Lys			
		195					200					205			

<210> 28

<211> 80

<212> PRT

<213> Homo sapiens

<400> 28

Met	Gly	Lys	Gly	Asp	Pro	Lys	Lys	Pro	Arg	Gly	Lys	Met	Ser	Ser	Cys
1				5					10					15	
Ala	Phe	Phe	Val	Gln	Thr	Cys	Trp	Glu	Glu	His	Lys	Lys	Gln	Tyr	Pro
			20					25					30		
Asp	Ala	Ser	Ile	Asn	Phe	Ser	Glu	Phe	Ser	Gln	Lys	Cys	Pro	Glu	Thr
		35					40					45			
Trp	Lys	Thr	Thr	Ile	Ala	Lys	Glu	Lys	Gly	Lys	Phe	Glu	Asp	Met	Pro
	50					55					60				
Lys	Ala	Asp	Lys	Ala	His	Tyr	Glu	Arg	Glu	Met	Lys	Thr	Tyr	Ile	Pro
65					70					75					80

<210> 29

<211> 80

<212> PRT

<213> Homo sapiens

<400> 29

Lys	Gln	Arg	Gly	Lys	Met	Pro	Ser	Tyr	Val	Phe	Cys	Val	Gln	Thr	Cys
1				5					10					15	

11/19

```

Pro Glu Glu Arg Lys Lys Lys His Pro Asp Ala Ser Val Asn Phe Ser
      20      25      30
Glu Phe Ser Lys Lys Cys Leu Val Arg Gly Lys Thr Met Ser Ala Lys
      35      40      45
Glu Lys Gly Gln Phe Glu Ala Met Ala Arg Ala Asp Lys Ala Arg Tyr
      50      55      60
Glu Arg Glu Met Lys Thr Tyr Ile Pro Pro Lys Gly Glu Thr Lys Lys
      65      70      75      80

```

<210> 30
 <211> 86
 <212> PRT
 <213> Homo sapiens

```

<400> 30
Met Gly Lys Arg Asp Pro Lys Gln Pro Arg Gly Lys Met Ser Ser Tyr
  1      5      10      15
Ala Phe Phe Val Gln Thr Ala Gln Glu Glu His Lys Lys Lys Gln Leu
      20      25      30
Asp Ala Ser Val Ser Phe Ser Glu Phe Ser Lys Asn Cys Ser Glu Arg
      35      40      45
Trp Lys Thr Met Ser Val Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
      50      55      60
Lys Ala Asp Lys Ala Cys Tyr Glu Arg Glu Met Lys Ile Tyr Pro Tyr
      65      70      75      80
Leu Lys Gly Arg Gln Lys
      85

```

<210> 31
 <211> 70
 <212> PRT
 <213> Homo sapiens

```

<400> 31
Met Gly Lys Gly Asp Pro Lys Lys Pro Arg Glu Lys Met Pro Ser Tyr
  1      5      10      15
Ala Phe Phe Val Gln Thr Cys Arg Glu Ala His Lys Asn Lys His Pro
      20      25      30
Asp Ala Ser Val Asn Ser Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
      35      40      45
Trp Lys Thr Met Pro Thr Lys Gln Lys Gly Lys Phe Glu Asp Met Ala
      50      55      60
Lys Ala Asp Arg Ala His
      65      70

```

<210> 32
 <211> 648
 <212> DNA
 <213> Homo sapiens

```

<400> 32
atgggcaaag gagatcctaa gaagccgaca ggcaaaatgt catcatatgc atttttttgtg 60
caaacttgtc gggaggagca taagaagaag cacccagatg cttcagtcaa cttctcagag 120
ttttctaaga agtgctcaga gaggtggaag accatgtctg cttaaagagaa aggaaaaattt 180

```

```

gaagatatgg caaaggcgga caaggcccgt tatgaaagag aaatgaaaac ctatatccct 240
cccaaagggg agacaaaaaa gaagttcaag gatcccaatg cacccaagag gcttccttcg 300
gccttcttcc tcttctgctc tgagtatcgc ccaaaaatca aaggagaaca tcctggcctg 360
tccattggtg atgttgcgaa gaaactggga gagatgtgga ataacactgc tgcagatgac 420
aagcagcctt atgaaaagaa ggctgcgaag ctgaaggaaa aatacgaaaa ggatatagct 480
gcatatcgag ctaaaggaaa gcctgatgca gcaaaaaagg gagttgtcaa ggctgaaaaa 540
agcaagaaaa agaaggaaga ggaggaagat gaggaagatg aagaggatga ggaggaggag 600
gaagatgaag aagatgaaga agatgaagaa gaagatgatg atgatgaa 648

```

<210> 33

<211> 633

<212> DNA

<213> Homo sapiens

<400> 33

```

atgggcaaag gagatcctaa gaagccgaga ggcaaaatgt catcatatgc attttttgtg 60
caaacttgtc gggaggagca taagaagaag cactcagatg cttcagtcaa cttctcagag 120
ttttctaaca agtgctcaga gaggtggaag accatgtctg ctaaagagaa aggaaaattt 180
gaggatatgg caaaggcgga caagacccat tatgaaagac aaatgaaaac ctatatccct 240
cccaaagggg agacaaaaaa gaagttcaag gatcccaatg cacccaagag gcctccttcg 300
gccttcttcc tgttctgctc tgagtatcac ccaaaaatca aaggagaaca tcctggcctg 360
tccattggtg atgttgcgaa gaaactggga gagatgtgga ataacactgc tgcagatgac 420
aagcagcctg gtgaaaagaa ggctgcgaag ctgaaggaaa aatacgaaaa ggatatgtct 480
gcatatcaag ctaaaggaaa gcctgaggca gcaaaaaagg gagttgtcaa agctgaaaaa 540
agcaagaaaa agaaggaaga ggaggaagat gaggaagatg aagaggatga ggaggaggaa 600
gatgaagaag atgaagaaga tgatgatgat gaa 633

```

<210> 34

<211> 564

<212> DNA

<213> Homo sapiens

<400> 34

```

atgggcaaag gagaccctaa gaagccgaga ggcaaaatgt catcatatgc attttttgtg 60
caaacttgtc gggaggagtg taagaagaag caccagatg cttcagtcaa cttctcagag 120
ttttctaaga agtgctcaga gaggtggaag gccatgtctg ctaaagataa aggaaaattt 180
gaagatatgg caaagggtga caaagaccgt tatgaaagag aaatgaaaac ctatatccct 240
cctaaagggg agacaaaaaa gaagttcgag gattccaatg cacccaagag gcctccttcg 300
gcctttttgc tgttctgctc tgagtattgc ccaaaaatca aaggagagca tcctggcctg 360
cctattagcg atgttgcaaa gaaactggta gagatgtgga ataacacttt tgcagatgac 420
aagcagcttt gtgaaaagaa ggctgcaaag ctgaaggaaa aatacaaaaa ggatacagct 480
acatatcgag ctaaaggaaa gcctgatgca gcaaaaaagg gagttgtcaa ggctgaaaaa 540
agcaagaaaa agaaggaaga ggag 564

```

<210> 35

<211> 615

<212> DNA

<213> Homo sapiens

<400> 35

```

atggacaaag cagatcctaa gaagctgaga ggtgaaatgt tatcatatgc attttttgtg 60
caaacttgtc aggaggagca taagaagaag aaccagatg cttcagtcaa gttctcagag 120
tttttaaga agtgctcaga gacatggaag accatttttg ctaaagagaa aggaaaattt 180
gaagatatgg caaaggcgga caaggcccat tatgaaagag aaatgaaaac ctatatccct 240
cctaaagggg agaaaaaaa gaagttcaag gatcccaatg cacccaagag gcctcctttg 300
gcctttttcc tgttctgctc tgagtatcgc ccaaaaatca aaggagaaca tcctggcctg 360
tccattgatg atgttgtgaa gaaactggca gggatgtgga ataacaccgc tgcagctgac 420

```

13/19

```

aagcagtttt atgaaaagaa ggctgcaaag ctgaaggaaa aatacaaaaa ggatattgct 480
gcatatcgag ctaaaggaaa gcctaattca gcaaaaaaga gagttgtcaa ggctgaaaaa 540
agcaagaaaa agaaggaaga ggaagaagat gaagaggatg aacaagagga ggaaaatgaa 600
gaagatgatg ataaa                                     615

```

```

<210> 36
<211> 240
<212> DNA
<213> Homo sapiens

```

```

<400> 36
atgggcaaag gagatcctaa gaagccgaga ggcaaaatgt catcatgtgc attttttgtg 60
caaacttggt gggaggagca taagaagcag taccagatg cttcaatcaa cttctcagag 120
ttttctcaga agtgcccaga gacgtggaag accacgattg cttaaagagaa aggaaaattt 180
gaagatatgc caaaggcaga caaggcccat tatgaaagag aaatgaaaac ctatataccc 240

```

```

<210> 37
<211> 240
<212> DNA
<213> Homo sapiens

```

```

<400> 37
aaacagagag gcaaaatgcc atcgtatgta ttttgtgtgc aaacttgtcc ggaggagcgt 60
aagaagaaac acccagatgc ttcagtcaac ttctcagagt tttctaagaa gtgcttagtg 120
agggggaaga ccatgtctgc taaagagaaa ggacaatttg aagctatggc aagggcagac 180
aaggcccggt acgaaagaga aatgaaaaca tatatccctc cttaaagggga gacaaaaaaa 240

```

```

<210> 38
<211> 258
<212> DNA
<213> Homo sapiens

```

```

<400> 38
atggggcaaaa gagaccctaa gcagccaaga ggcaaaatgt catcatatgc attttttgtg 60
caaactgctc aggaggagca caagaagaaa caactagatg cttcagtcag tttctcagag 120
ttttctaaga actgctcaga gaggtggaag accatgtctg ttaaagagaa aggaaaattt 180
gaagacatgg caaaggcaga caaggcctgt tatgaaagag aaatgaaaat atatccctac 240
ttaaagggga gacaaaaa                                     258

```

```

<210> 39
<211> 211
<212> DNA
<213> Homo sapiens

```

```

<400> 39
atggggcaaag gagaccctaa gaagccaaga gagaaaatgc catcatatgc attttttgtg 60
caaacttgta gggaggcaca taagaacaaa catccagatg cttcagtcag ctcctcagag 120
ttttctaaga agtgctcaga gaggtggaag accatgccta ctaaacagaa aggaaaattc 180
gaagatatgg caaaggcaga cagggcccat a                                     211

```

```

<210> 40
<211> 54
<212> PRT
<213> Homo sapiens

```

<400> 40

```

Pro Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu
 1          5          10          15
Arg Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met
          20          25          30
Ala Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile
          35          40          45
Pro Pro Lys Gly Glu Thr
          50

```

<210> 41

<211> 53

<212> PRT

<213> Homo sapiens

<400> 41

```

Asp Ser Ser Val Asn Phe Ala Glu Phe Ser Lys Lys Cys Ser Glu Arg
 1          5          10          15
Trp Lys Thr Met Ser Ala Lys Glu Lys Ser Lys Phe Glu Asp Met Ala
          20          25          30
Lys Ser Asp Lys Ala Arg Tyr Asp Arg Glu Met Lys Asn Tyr Val Pro
          35          40          45
Pro Lys Gly Asp Lys
          50

```

<210> 42

<211> 54

<212> PRT

<213> Homo sapiens

<400> 42

```

Pro Glu Val Pro Val Asn Phe Ala Glu Phe Ser Lys Lys Cys Ser Glu
 1          5          10          15
Arg Trp Lys Thr Val Ser Gly Lys Glu Lys Ser Lys Phe Asp Glu Met
          20          25          30
Ala Lys Ala Asp Lys Val Arg Tyr Asp Arg Glu Met Lys Asp Tyr Gly
          35          40          45
Pro Ala Lys Gly Gly Lys
          50

```

<210> 43

<211> 54

<212> PRT

<213> Homo sapiens

<400> 43

```

Pro Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu
 1          5          10          15
Arg Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met
          20          25          30
Ala Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile
          35          40          45
Pro Pro Lys Gly Glu Thr
          50

```

<210> 44
 <211> 54
 <212> PRT
 <213> Homo sapiens

<400> 44
 Ser Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Asn Lys Cys Ser Glu
 1 5 10 15
 Arg Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met
 20 25 30
 Ala Lys Ala Asp Lys Thr His Tyr Glu Arg Gln Met Lys Thr Tyr Ile
 35 40 45
 Pro Pro Lys Gly Glu Thr
 50

<210> 45
 <211> 54
 <212> PRT
 <213> Homo sapiens

<400> 45
 Pro Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu
 1 5 10 15
 Arg Trp Lys Ala Met Ser Ala Lys Asp Lys Gly Lys Phe Glu Asp Met
 20 25 30
 Ala Lys Val Asp Lys Ala Asp Tyr Glu Arg Glu Met Lys Thr Tyr Ile
 35 40 45
 Pro Pro Lys Gly Glu Thr
 50

<210> 46
 <211> 54
 <212> PRT
 <213> Homo sapiens

<400> 46
 Pro Asp Ala Ser Val Lys Phe Ser Glu Phe Leu Lys Lys Cys Ser Glu
 1 5 10 15
 Thr Trp Lys Thr Ile Phe Ala Lys Glu Lys Gly Lys Phe Glu Asp Met
 20 25 30
 Ala Lys Ala Asp Lys Ala His Tyr Glu Arg Glu Met Lys Thr Tyr Ile
 35 40 45
 Pro Pro Lys Gly Glu Lys
 50

<210> 47
 <211> 54
 <212> PRT
 <213> Homo sapiens

<400> 47
 Pro Asp Ala Ser Ile Asn Phe Ser Glu Phe Ser Gln Lys Cys Pro Glu
 1 5 10 15

16/19

Thr Trp Lys Thr Thr Ile Ala Lys Glu Lys Gly Lys Phe Glu Asp Met
 20 25 30
 Ala Lys Ala Asp Lys Ala His Tyr Glu Arg Glu Met Lys Thr Tyr Ile
 35 40 45
 Pro Pro Lys Gly Glu Thr
 50

<210> 48
 <211> 38
 <212> PRT
 <213> Homo sapiens

<400> 48
 Pro Asp Ala Ser Val Asn Ser Ser Glu Phe Ser Lys Lys Cys Ser Glu
 1 5 10 15
 Arg Trp Lys Thr Met Pro Thr Lys Gln Gly Lys Phe Glu Asp Met Ala
 20 25 30
 Lys Ala Asp Arg Ala His
 35

<210> 49
 <211> 54
 <212> PRT
 <213> Homo sapiens

<400> 49
 Pro Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Leu Val
 1 5 10 15
 Arg Gly Lys Thr Met Ser Ala Lys Glu Lys Gly Gln Phe Glu Ala Met
 20 25 30
 Ala Arg Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile
 35 40 45
 Pro Pro Lys Gly Glu Thr
 50

<210> 50
 <211> 54
 <212> PRT
 <213> Homo sapiens

<400> 50
 Leu Asp Ala Ser Val Ser Phe Ser Glu Phe Ser Asn Lys Cys Ser Glu
 1 5 10 15
 Arg Trp Lys Thr Met Ser Val Lys Glu Lys Gly Lys Phe Glu Asp Met
 20 25 30
 Ala Lys Ala Asp Lys Ala Cys Tyr Glu Arg Glu Met Lys Ile Tyr Pro
 35 40 45
 Tyr Leu Lys Gly Arg Gln
 50

<210> 51
 <211> 74
 <212> PRT

17/19

<213> Homo sapiens

<400> 51

```

Phe Lys Asp Pro Asn Ala Pro Lys Arg Pro Pro Ser Ala Phe Phe Leu
 1           5           10           15
Phe Cys Ser Glu Tyr Arg Pro Lys Ile Lys Gly Glu His Pro Gly Leu
           20           25           30
Ser Ile Gly Asp Val Ala Lys Lys Leu Gly Glu Met Trp Asn Asn Thr
      35           40           45
Ala Ala Asp Asp Lys Gln Pro Tyr Glu Lys Lys Ala Ala Lys Leu Lys
      50           55           60
Glu Lys Tyr Glu Lys Asp Ile Ala Ala Tyr
65           70

```

<210> 52

<211> 74

<212> PRT

<213> Homo sapiens

<400> 52

```

Lys Lys Asp Pro Asn Ala Pro Lys Arg Pro Pro Ser Ala Phe Phe Leu
 1           5           10           15
Phe Cys Ser Glu His Arg Pro Lys Ile Lys Ser Glu His Pro Gly Leu
           20           25           30
Ser Ile Gly Asp Thr Ala Lys Lys Leu Gly Glu Met Trp Ser Glu Gln
      35           40           45
Ser Ala Lys Asp Lys Gln Pro Tyr Glu Gln Lys Ala Ala Lys Leu Lys
      50           55           60
Glu Lys Tyr Glu Lys Asp Ile Ala Ala Tyr
65           70

```

<210> 53

<211> 74

<212> PRT

<213> Homo sapiens

<400> 53

```

Phe Lys Asp Pro Asn Ala Pro Lys Arg Leu Pro Ser Ala Phe Phe Leu
 1           5           10           15
Phe Cys Ser Glu Tyr Arg Pro Lys Ile Lys Gly Glu His Pro Gly Leu
           20           25           30
Ser Ile Gly Asp Val Ala Lys Lys Leu Gly Glu Met Trp Asn Asn Thr
      35           40           45
Ala Ala Asp Asp Lys Gln Pro Tyr Glu Lys Lys Ala Ala Lys Leu Lys
      50           55           60
Glu Lys Tyr Glu Lys Asp Ile Ala Ala Tyr
65           70

```

<210> 54

<211> 74

<212> PRT

<213> Homo sapiens

<400> 54

18/19

```

Phe Lys Asp Pro Asn Ala Pro Lys Arg Pro Pro Ser Ala Phe Phe Leu
 1           5           10           15
Phe Cys Ser Glu Tyr His Pro Lys Ile Lys Gly Glu His Pro Gly Leu
           20           25           30
Ser Ile Gly Asp Val Ala Lys Lys Leu Gly Glu Met Trp Asn Asn Thr
      35           40           45
Ala Ala Asp Asp Lys Gln Pro Gly Glu Lys Lys Ala Ala Lys Leu Lys
      50           55           60
Glu Lys Tyr Glu Lys Asp Ile Ala Ala Tyr
65           70

```

```

<210> 55
<211> 74
<212> PRT
<213> Homo sapiens

```

```

<400> 55
Phe Lys Asp Ser Asn Ala Pro Lys Arg Pro Pro Ser Ala Phe Leu Leu
 1           5           10           15
Phe Cys Ser Glu Tyr Cys Pro Lys Ile Lys Gly Glu His Pro Gly Leu
           20           25           30
Pro Ile Ser Asp Val Ala Lys Lys Leu Val Glu Met Trp Asn Asn Thr
      35           40           45
Phe Ala Asp Asp Lys Gln Leu Cys Glu Lys Lys Ala Ala Lys Leu Lys
      50           55           60
Glu Lys Tyr Lys Lys Asp Thr Ala Thr Tyr
65           70

```

```

<210> 56
<211> 74
<212> PRT
<213> Homo sapiens

```

```

<400> 56
Phe Lys Asp Pro Asn Ala Pro Lys Arg Pro Pro Ser Ala Phe Phe Leu
 1           5           10           15
Phe Cys Ser Glu Tyr Arg Pro Lys Ile Lys Gly Glu His Pro Gly Leu
           20           25           30
Ser Ile Gly Asp Val Val Lys Lys Leu Ala Gly Met Trp Asn Asn Thr
      35           40           45
Ala Ala Ala Asp Lys Gln Phe Tyr Glu Lys Lys Ala Ala Lys Leu Lys
      50           55           60
Glu Lys Tyr Lys Lys Asp Ile Ala Ala Tyr
65           70

```

```

<210> 57
<211> 84
<212> PRT
<213> Homo sapiens

```

```

<400> 57
Gly Lys Gly Asp Pro Lys Lys Pro Arg Gly Lys Met Ser Ser Tyr Ala
 1           5           10           15

```

```

Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro Asp
      20      25      30
Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg Trp
      35      40      45
Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala Lys
      50      55      60
Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro Pro
      65      70      75      80
Lys Gly Glu Thr

```

```

<210> 58
<211> 92
<212> PRT
<213> Homo sapiens

```

```

<400> 58
Phe Lys Asp Pro Asn Ala Pro Lys Arg Pro Pro Ser Ala Phe Phe Leu
  1      5      10      15
Phe Cys Ser Glu Tyr Arg Pro Lys Ile Lys Gly Glu His Pro Gly Leu
      20      25      30
Ser Ile Gly Asp Val Ala Lys Lys Leu Gly Glu Met Trp Asn Asn Thr
      35      40      45
Ala Ala Asp Asp Lys Gln Pro Tyr Glu Lys Lys Ala Ala Lys Leu Lys
      50      55      60
Glu Lys Tyr Glu Lys Asp Ile Ala Ala Tyr Arg Ala Lys Gly Lys Pro
      65      70      75      80
Asp Ala Ala Lys Lys Gly Val Val Lys Ala Glu Lys
      85      90

```